

14 into 5

 $X^1 = OH, SH, NH_2$

which units may be combined in any order; t is 1; X^1 is any reactive group which can be used in biopolymer synthesis; n is 3 or 4; R¹, X¹, and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkoxy carbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyoxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylarylamino, alkylcarbonylamino, alkoxy carbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyanato, isothiocyanato, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl.

C2 7. (Amended) The LPC of claim 5, wherein Z is a group with three or more points of attachment: one to A, and the others to two or more X¹ groups.

C3 11. (Amended) The LPC of claim 5, wherein p is 0 and n is 4.

12. (Amended) The LPC of claim 5, wherein Z is any combination of 1-12 units selected from 1,4-phenylene and methylene, which units may be combined in any order.

13. (Amended) The LPC of claim 5, wherein Z is C₁₋₁₂ alkylene.

cancels 14. (Amended) The LPC of claim 5, wherein X¹ is OH, SH or NH₂.

C4 33. (Amended) A method of solution phase biopolymer synthesis, comprising the steps of:

AMENDMENT AND RESPONSE

(a) reacting an LPC of formula $(R^1)_p\text{-A-(Z}_t\text{-X}^1\text{)}_n$ with a first monomer N¹;

(b) separating and purifying the product of step (a) to afford a compound of formula $(R^1)_p\text{-A-(Z}_t\text{-X}^1\text{-N}^1\text{)}_n$;

(c) reacting the product of step (b) with a second monomer N², a dimer N²-N³ or a trimer N²-N³-N⁴; and

(d) repeating steps (b) and (c) to produce an LPC-bound biopolymer of formula $(R^1)_p\text{-A-(Z}_t\text{-X}^1\text{-N}^1\text{-N}^2\text{-...-N}^m\text{)}_n$, where m is 3 to 100, wherein:

A is silicon; R¹ is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl; p is 0 or 1; Z is any combination of 0-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1; X¹ is any reactive group which can be used in biopolymer synthesis; n is 3 or 4; R¹, X¹, and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkoxy carbonyl-alkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylarylamino, alkylcarbonylamino, alkoxy carbonyl amino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyanato, isothiocyanato, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl; and

N¹, N², N³...N^m are biopolymer monomers; and

C4
Concld
CB

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KÖSTER et al.

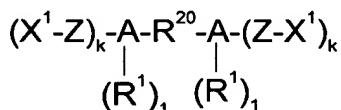
AMENDMENT AND RESPONSE

the dimers and trimers comprise the monomers.

37. (Amended) The method of claim 33, wherein n is 3 or 4.

39. (Amended) The method of claim 33, wherein X¹ is OH, SH, NH₂, COR⁵ or COOR⁴, where R⁴ is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl; and R⁵ is halide, heteroaryl or pseudohalide.

45. (Amended) A liquid phase carrier (LPC) that has formula:



C1

wherein: A is silicon; R¹ is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl; Z is any combination of 1-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1; X¹ is any reactive group which can be used in biopolymer synthesis; R¹, X¹, and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino,